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BOERHAVIA COULTERI VAR. *COULTERI* (NYCTAGINACEE), NEW TO CALIFORNIA

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ABSTRACT

Boerhavia coulteri var. *coulteri* is reported as new to California. The taxon was a major component among a dense population of two other boerhavias, *B. coulteri* var. *palmeri* and *B. triquetra* var. *intermedia*, that occurred for several kilometers along Interstate Highway 15 contiguous with the Nevada state line at Primm. The var. *coulteri* is rather weedy and seems to be spreading from its original range in the Sonoran Desert.

KEY WORDS: Nyctaginaceae, *Boerhavia*, San Bernardino Co., California, new record

While returning to New Mexico from a family visit to California I noted a dense stand of robust plants of *Boerhavia* at the edge of the pavement of Interstate Highway 15 on the filled roadbed of the highway that crosses the dry bed of Ivanpah Lake. The population extended for several kilometers west of the Nevada state line. The most westward plants noted were of *Boerhavia coulteri* var. *coulteri*, easily seen to be erect plants with bright green stems. Slightly eastward it was apparent at least one other *Boerhavia* with spreading, purplish stems occurred with the var. *coulteri*. My wife and I turned the car around in Primm and went back, quickly stopped on this very busy interstate, took location notes, hastily grabbed samples of each of the species, stuffed them in the back seat, and returned to a vacant parking lot in Primm to press them. Among the three taxa collected was the var. *coulteri*, a taxon not included in Murdock's excellent treatment of the Nyctaginaceae (Murdock 2012) in the recently revised Jepson Manual. Searches of relevant herbaria websites also reveal no specimens of the taxon collected in California. To my knowledge, this is the first report for California of *B. coulteri* var. *coulteri*, a Sonoran Desert taxon that seems to be spreading into surrounding areas as a weed in cities and along roadsides.

The record is as follows: **Boerhavia coulteri** var. **coulteri**. **California**. San Bernardino Co.: IH-15 on highway fill across Ivanpah Lake bed, 3 km SW of Nevada state line at Primm, 35°34.876', 115°24.130'; elev. 800 m, road shoulder on S side of interstate in area otherwise nearly barren of vegetation; plants part of a dense, robust, population of 3 taxa of boerhavias intertangled among one another, the population ca. 4 km long, and 1–2 m wide; with *B. triquetra* var. *intermedia* (*14458*) and *B. coulteri* var. *palmeri* (*14459*), also with scattered *Kallstroemia grandiflora*, 12 Sept. 2012, *R. Spellenberg and N. Zucker 14459* (RSA, to be deposited). Figure 1 shows all three taxa.

The three taxa are distinguished by the characters used in the Nyctaginaceae treatment for the Flora of North America (Spellenberg 2003). At this site they were also distinguished as follows:

Boerhavia coulteri (Hook. f.) S. Wats. var. **coulteri** – stems bright green, strongly ascending to erect; perianth pale pink; plants well into fruit maturation.

Boerhavia coulteri (Hook. f.) S. Wats. var. **palmeri** (S. Wats.) Spellenb. – stems purplish, widely spreading to ascending; perianth pink; plants just beginning fruit maturation.

Boerhavia triquetra S. Wats. var. **intermedia** (M.E. Jones) Spellenb. – stems green, stems spreading to erect; perianth pale pink; plants well into fruit maturation.

Figure 1. Photos of *Boerhavia* from the site at Ivanpah Lake, California, from specimens cited. A. *Boerhavia coulteri* var. *coulteri*; B. *B. coulteri* var. *palmeri*; C. *B. triquetra* var. *intermedia*. Fruits of A and B are 3.1 mm long; fruits of C are 2.5 mm long.

The short duration of the stop along this busy freeway did not allow a search for intergradation between the two varieties of *Boerhavia coulteri*. As noted in Spellenberg (2003), intergradient plants are occasionally encountered in Arizona. In this population the fruits on the specimen of var. *palmeri* that was collected are larger than indicated in Spellenberg (2003), about the same size as fruits of var. *coulteri* in this population. There was also little habitat separation noted between the taxa, with the exception that the var. *coulteri* was the first noted at the western end of the population, the other two species occurring eastward with *B. coulteri* var. *coulteri* in the mix. The phenological and morphological differences noted among these sympatric varieties suggest that species level classification may be preferable to varietal level classification within *B. coulteri*, but that decision should await careful studies among populations of both varieties.

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